

**REMARKS**

The applicants originally submitted claims 1-28 in this application. The applicants have amended claims 1, 5, 11, 16, 22 and 25, but have not cancelled any claims. Accordingly, claims 1-28 remain pending in this application.

**Claim Rejection – 35 U.S.C. § 102**

Claims 1, 2, 11, 14, 15, 22 and 24 stand rejected under 35 U.S.C. §102(e) as being clearly anticipated by Keller (US Patent No. 5,621,842) and Nothofer et al. (US Patent No. 5,878,180). The applicants respectfully traverse the rejection in view of the foregoing claim amendments and the remarks set forth below.

The applicants have amended independent claims 1, 11 and 22 to clarify that the modulus of the multi-fiber unit tube is less than approximately 70,000 psi. Support for these amendments can be found, e.g., at page 5, lines 15-19 of the applicants' specification. The applicants have amended claims 5, 16 and 25 in response to the amendments to claims 1, 11 and 22.

By comparison, Keller discloses an optical fiber cable having a protective filler member (6) made up of fibers (7) embedded in a resin (8) with a composite modulus of elasticity between 10,000 and 55,000 Newton per square millimeter ( $N/mm^2$ ), which is equal to approximately 1,450,380-7,977,090 pounds per square inch (psi) ( $1 N/mm^2 = 145.038 \text{ psi}$ ). See Keller, e.g., at col. 3, lines 56-63. The modulus of Keller's protective filler member is higher than is typical for conventional multi-fiber unit tubes. See the applicants' specification, e.g., at page 5, lines 9-14.

The applicants' invention uses a multi-fiber unit tube that is at least an order of magnitude less than the modulus disclosed in of Keller. The applicants use a relatively soft and flexible multi-fiber unit tube so as not to disturb optical fiber performance. See the applicants' specification, e.g., from page 5, line 32 to page 6, line 5. The applicants' multi-fiber unit tube provides minimal strength to the cable. By comparison, Keller uses a filler member with a relatively high modulus of elasticity for strength. However, in using such a high modulus filler member, Keller neglects to consider the harmful effects that such a filler member

has on fiber performance, as high modulus materials can translate high mechanical loads to the fiber, causing signal attenuation.

Nothofer et al. says nothing of their cable “casing” (9), other than to say that it is made of “a suitable plastic material” (see Nothofer et al. at col. 2, lines 48-49). However, Nothofer et al. do indicate that the casing can include reinforcing elements for strength (see Nothofer et al. at col. 2, lines 50-53). Clearly, Nothofer et al. do not teach or suggest using a relatively soft and flexible multi-fiber unit tube such as that in the applicants’ invention.

The applicants have amended independent claims 1, 11 and 22 to clarify this distinction between the applicants’ invention and both Keller and Nothofer et al. In view of these amendments, the applicants’ respectfully submit that the applicants’ invention is not anticipated by Keller or Nothofer et al., and respectfully request that the Examiner withdraw the rejection. Furthermore, as discussed in greater detail hereinbelow, the applicants’ invention as set forth in the amended claims is not obvious in view of either Keller or Nothofer et al.

### **Claim Rejection – 35 U.S.C. § 103**

The Examiner rejected claims 3-7, 12, 13, 16, 17, 25 and 26 under 35 U.S.C. §103(a) as being unpatentable over Keller and Nothofer et al. in view of Gaillard (US Patent No. 5,751,880). The applicants respectfully traverse the rejection in view of the foregoing claim amendments and the remarks set forth below.

As discussed hereinabove, the applicants have amended independent claims 1, 11 and 22 to clarify that the applicants’ multi-fiber unit tube is made of a relatively soft and flexible material having a modulus less than approximately 70,000 psi. Nothing in the primary references Keller and Nothofer et al. teaches or suggests using such a soft multi-fiber unit tube. As discussed hereinabove with respect to the Examiner’s previous rejection, both Keller and Nothofer et al. are concerned with providing strength and reinforcement to their cables. Based on the teachings and suggestions of Keller and Nothofer et al., it would not be obvious for one skilled in the art to use the relatively soft and flexible multi-fiber

unit tube of the applicants' invention since a soft and flexible multi-fiber tube would not provide the strength and protection of a multi-fiber tube having a much higher modulus. Again, the applicants' invention uses a relatively soft and flexible multi-fiber unit tube so as to not disturb optical fiber performance. Both Keller and Nothofer et al. are silent to such concern.

Gaillard, which is cited for its use of water swelling filling, fails to cure the deficiencies of Keller and Nothofer et al. with respect to the applicants' invention as recited in the claims as amended.

Claims 3-7 depend from independent claim 1 and incorporate all of the features of claim 1; claims 12, 13, 16 and 17 depend from independent claim 11 and incorporate all of the features of claim 11; and claims 25 and 26 depend from independent claim 22 and incorporate all of the features of claim 22.

Accordingly, the rejected claims are patentably distinct over the cited art for at least all of the reasons discussed above in connection with their respective independent claim. Furthermore, the rejected claims include other features not shown in or suggested by the art of record.

In view of these remarks, the applicants respectfully submit that claims 3-7, 12, 13, 16, 17, 25 and 26 are not obvious in view of the cited art, and respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §103(a) over Keller and Nothofer et al. in view of Gaillard.

### **Claim Rejection – 35 U.S.C. § 103**

The Examiner rejected claims 10 and 18 under 35 U.S.C. §103(a) as being unpatentable over Keller or Nothofer et al. in view of Rahman (US Patent No. 5,229,851). The applicants respectfully traverse the rejection in view of the foregoing claim amendments and the remarks set forth below.

As discussed hereinabove, the applicants have amended independent claims 1, 11 and 22 to clarify distinctions between the applicants' invention and both Keller and Nothofer et al. Rahman, which is cited for its disclosure of stranding together multi-fiber unit tubes in a SZ configuration, fails to cure the

deficiencies of Keller and Nothofer et al. with respect to the applicants' invention as recited in the applicants' amended claims.

Claim 10 depends from independent claim 1 and incorporates all of the features of claim 1. Similarly, claim 18 depends from independent claim 11 and incorporates all of the features of claim 11. Thus, claims 10 and 18 are patentably distinct over the cited art for at least all of the reasons discussed above in connection with their respective independent claim. Furthermore, the rejected claims include other features not shown in or suggested by the art of record.

In view of these remarks, the applicants respectfully submit that claims 10 and 18 are not obvious in view of the cited art, and respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §103(a) over Keller and Nothofer et al. in view of Rahman.

#### **Claim Rejection – 35 U.S.C. § 103**

The Examiner rejected claims 8, 9, 19-21, 27 and 28 under 35 U.S.C. §103(a) as being unpatentable over Keller or Nothofer et al. in view of Logan et al. (US Patent No. 6,192,178). The applicants respectfully traverse the rejection in view of the foregoing claim amendments and the remarks set forth below.

As discussed hereinabove, the applicants have amended independent claims 1, 11 and 22 to clarify distinctions between the applicants' invention and both Keller and Nothofer et al. The Logan et al. reference, which is cited for its disclosure of stranding together multi-fiber unit tubes in a SZ configuration, fails to cure the deficiencies of Keller and Nothofer et al. with respect to the applicants' invention as recited in the applicants' amended claims.

Claims 8 and 9 depend from independent claim 1 and incorporate all of the features of claim 1; claims 19-21 depend from independent claim 11 and incorporate all of the features of claim 11; and claims 27 and 28 depend from independent claim 22 and incorporate all of the features of claim 22. Accordingly, the rejected claims are patentably distinct over the cited art for at least all of the reasons discussed above in connection with their respective

independent claim. Furthermore, the rejected claims include other features not shown in or suggested by the art of record.

In view of these remarks, the applicants respectfully submit that claims 8, 9, 19-21, 27 and 28 are not obvious in view of the cited art, and respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §103(a) over Keller and Nothofer et al. in view of Logan et al.

The applicants submit that all claims now are in patentable form, and respectfully urge that all the claims be allowed and the application be passed to issue. If the Examiner disagrees, the Examiner is invited to call the attorney for the applicants at the telephone number provided below.

Respectfully submitted,

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